500.36734CX1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): **K. KONDO et al.**

Serial No.: **Not Yet Assigned**
(Continuation of 09/190,005, filed November 12, 1998)

Filed: **January 23, 2002**

For: **METHOD OF AND SYSTEM FOR PROCESSING ELECTRONIC DOCUMENT AND RECORDING MEDIUM FOR RECORDING PROCESSING PROGRAM**

Art Unit: **Not Yet Assigned**

Examiner: **Not Yet Assigned**

PRELIMINARY AMENDMENT

Assistant Commissioner of Patents
Washington, D.C. 20231

January 23, 2002

Sir:

Prior to examination, please enter thereto the following Preliminary Amendment.

IN THE SPECIFICATION:

Please amend the specification as follows:

Page 1, following the title, please insert the following paragraph:

-- **Cross-Reference to Related Application**

This application is a continuation of application number 09/190,005, filed November 12, 1998 --;

Paragraph beginning at page 17, line 17, has been amended as follows:

A CPU 46 is a processing apparatus for controlling the whole operation of the form

processing and generating apparatus 7. When the form processing and generating apparatus 7 defines a form format and a processing procedure, all of other apparatus and the network need not be connected together. The main memory 49 is a storage device for loading a variety of processing programs and data used to execute a suitable processing such as a key generation processing and a processing definition. The display 41 is a display device capable of displaying processed contents of the processing programs.

Paragraph beginning at page 17, line 19, has been amended as follows:

The keyboard 42 is an input device for executing an operation in accordance with the processing program and to enter data. The mouse 43 is a device capable of entering an instruction in accordance with the processing program and to enter data. The floppy disk drive 44 is an apparatus capable of writing the private key generated by a private key FD (floppy disk) generating program 494 in the floppy disk 45.

Paragraph beginning at page 17, line 27, has been amended as follows:

The floppy disk 45 is a storage medium in which there is stored the private key generated by the private key FD generating program. The hard disk 47 is a storage device capable of temporarily storing at least the form format file 470 and the processing definition file 471 as defined results and is able to store the public key file 472 generated by the public key file generating program 495.

Paragraph beginning at page 18, line 16, has been amended as follows:

The form format file 470 is a file capable of storing a form format which is a format representing a layout required when an electronic form is outputted on the screen of the

display 41 and a printer or the like. The processing definition file 471 is a file capable of storing the processing definition which defines the contents of the processing effected on the electronic form.

Paragraph beginning at page 19, line 7, has been amended as follows:

The entire control program 490 is a processing unit capable of controlling the entire operation of the key generating processing and the form defining processing. The key generating processing control program 491 is a process unit capable of controlling the whole of the key generating process for generating the private key and the public key.

Paragraph beginning at page 21, line 13, has been amended as follows:

The CPU 16 is a processing unit capable of controlling the entire operation of the form processing apparatus 1. The main memory 19 is a storage device capable of loading a variety of processing programs and data which are used to encrypt and decrypt form data and to execute the contents of process definition.

Paragraph beginning at page 21, line 19, has been amended as follows:

The display 11 is a device capable of displaying processed contents of the processing program. The keyboard 12 is an input device capable of executing an operation in accordance with the processing program entering data. The mouse 13 is a device for inputting an instruction in accordance with the processing program.

Paragraph beginning at page 21, line 25, has been amended as follows:

The floppy disk drive 14 is a device capable of reading out a private key from the

floppy disk 45. The hard disk 17 is a storage device capable of temporarily storing at least the form format file 470, the process defining file 471 and the form data file 172.

Paragraph beginning at page 24, line 21, has been amended as follows:

The floppy disk 45 is a medium storage capable of recording the private key file 451 in which a private key file 451 in which a private key is stored. The private key is read in the work area 197 of the main memory 19 through the floppy disk drive 14.

Paragraph beginning at page 26, line 13, has been amended as follows:

The CPU 136 is a processing unit capable of controlling the whole operation of the form processing apparatus 3. The main memory 139 is a storage device capable of loading a variety of processing programs and data for encrypting form data and executing the contents of the process defining. The display 131 is a device capable of displaying the processed contents of the processing program.

Paragraph beginning at page 26, line 16, has been amended as follows:

The keyboard 132 is a device capable of executing an operation and entering data in accordance with the processing program. The mouse 133 is a device capable of inputting an instruction in accordance with the processing program. The hard disk 137 is a storage device capable of temporarily storing the form format file 470 and the process defining file 471.

Paragraph beginning at page 29, line 15, has been amended as follows:

Referring to FIG. 6, and following the start of operation, when receiving a key generating instruction from an originator, at step 501, the entire control program 490 activates

the key generating processing control program 491, and the key generating processing control program 491 sets a program counter K provided within the work area 475 to "0".

Paragraph beginning at page 29, line 20, has been amended as follows:

At [a] step 502, the key generating processing control program 491 adds "1" to K and counts the issue number 63. In the next decision step 503, the value of K and the value of N are compared with each other by the key generating processing control program 491. If $K \leq N$ as represented by a YES at the decision step 503, then control goes to step 504 and the following steps are executed. If a NO is outputted at the decision step 503, then control is ended.

Paragraph beginning at page 30, line 1, has been amended as follows:

In step 504, the key generating processing control program 491 generates a pair of the private key 64 and the public key 67 based on the public-key cryptosystem by using the key generating program 492, and stores the pair of the private key 64 and the public key 67 thus generated in the work area 475.

Paragraph beginning at page 30, line 10, has been amended as follows:

In step 505, the key generating processing control program 491 executes the worker ID registration program 493, and stores the ID number 61 and the password 62 of the target worker entered by the originator from the keyboard 42 in the work area 475. In this case, although it is assumed that the originator learns the password 62 from the worker in advance, the worker may enter the password 62 directly.

Paragraph beginning at page 30, line 18, has been amended as follows:

In step 506, the key generating processing control program 491 executes the private key FD generating program 494 to write the ID number 61 representing one worker, the password 62 of that person, the issue number 63 and the private key 64 based on the public-key cryptosystem in the private key file 451 within the private key storing floppy disk 45 newly loaded by the originator by using data stored in the work area 475.

Paragraph beginning at page 30, line 27, has been amended as follows:

In step 507, the key generating processing control program 491 executes the public key file generating program 495 to write the ID number 65, the issue number 66 and the public key 67 in the public key file 472 within the hard disk 47 by using data stored in the work area 475.

Paragraph beginning at page 31, line 13, has been amended as follows:

The floppy disk 45 which stores the private key 64 for decrypting form data is distributed in advance to the worker in response to the authorized duty before work is started. Here, let it be assumed that different private keys 64 in the form of the private key file 451 are distributed to the worker C and the payment server 6 and that the public keys 67 corresponding to at least the two private keys 64 are respectively stored in the public key file 472 of the electronic mall server 4.

Paragraph beginning at page 33, line 8, has been amended as follows:

Referring to FIG. 8 and following the start of operation, i.e. when the originator instructs the activation of the form defining processing control program 496 during the entire

control program 490 is activated, in step 701, there is activated the form defining processing control program 496 which defines the form format indicative of the layout on the screen and the processing definition which describes the method of processing form data.

Paragraph beginning at page 33, line 13, has been amended as follows:

In step 702, there is designated a kind of defined processing. In the next decision step 703, if it is determined whether the form format definition is designated. If the form format definition is designated, then control goes to step 704, whereat the form defining processing control program 496 activates the form format defining program 497. In the next step 705, the form format is defined by executing the form format defining program 497.

Paragraph beginning at page 33, line 28, has been amended as follows:

In the decision step 703, if it is determined that the processing definition is selected, control goes to step 706, whereat the form defining processing control program 496 activates the process defining program 498. The process definition defines the contents of the processing executed when the electronic form 30 is received, and is stored in the process defining file 471.

Paragraph beginning at page 34, line 5, has been amended as follows:

In step 707, the kind of the processing definition is inputted, and the item processing indicative of a method of calculating form data of respective items and the postprocessing indicative of a processing method executed after a form a data input end instruction was issued are designated.

Paragraph beginning at page 34, line 12, has been amended as follows:

If the item processing definition is designated at decision step 708, then control goes to step 709, wherein the process defining program 498 activates the item process defining program 499. In the next step 710, the item processing definition is executed by executing the item process defining program 499.

Paragraph beginning at page 34, line 19, has been amended as follows:

If on the other hand the postprocessing definition is designated at the decision step 708, then control goes to step 711, whereat the process defining program 498 activates the postprocessing defining program 476. In the next step 712, the postprocessing definition is executed by executing the postprocessing defining program 476.

Paragraph beginning at page 34, line 25, has been amended as follows:

If there is an instruction for executing other definition after step 705, step 710, or step 712 was ended, then control goes back from step 713 to step 702. If all definitions are needed, then control goes to step 714, whereat the previously-defined contents are registered in the form format file 470 or the process defining file 471, and the processing is ended.

Paragraph beginning at page 38, line 26, has been amended as follows:

The dimension number 525 is information indicative of the dimension of the cell within the table. The item list pointer information 526 is information indicative of the pointer to the item list 54. The item style information 527 is information indicating whether the item within the table is the table top item or the table side item.

Paragraph beginning at page 46, line 5, has been amended as follows:

FIG. 14 is a flowchart showing the procedure in which the purchaser A applies for the purchase order. Referring to FIG. 14, and following the start of operation, in step 1401, when the purchaser A instructs the start of the form issue work by the form processing apparatus 3 which may be connected to the internet 22, the entire control program 190 activates the data input and output program 191.

Paragraph beginning at page 46, line 10, has been amended as follows:

In step 1402, when a URL (Uniform Resource Locator) indicative of a home page address of a desired electronic mail is designated in the WWW browser, the data input and output program 191 issues an information transfer request to the electronic mall server 4 having that URL. Then, the data input and output program 191 receives the form format file 470 and the process defining file 471 transferred from the electronic mall server 4 and temporarily writes the same in the hard disk 137. Further, the form format file 470 is written in the form format table 199 on the main memory 139, and the process defining file 471 is written in the work area 197.

Paragraph beginning at page 46, line 23, has been amended as follows:

In step 1403, the entire control program 190 activates the form process defining and executing program 194 to display the contents of the form format table 199 on the display 131 of the form processing apparatus 3 as the electronic form 30.

Paragraph beginning at page 51, line 4, has been amended as follows:

In step 1702, the data input and output program 191 reads form data of the electronic

form 30 transmitted through the network from the purchaser A in the form data table 196 on the main memory 19. Further, the data input and output program 191 reads the form format file 470 in the form format table 199, and reads the process defining file 471 in the work area, respectively.

Paragraph beginning at page 51, line 12, has been amended as follows:

In step 1703, the entire control program 190 activates the form data decryption program 192 to decrypt the form data table 196. In step 1704, the entire control program 190 activates the form format edit program 193 to edit the form format table 199.

Paragraph beginning at page 51, line 17, has been amended as follows:

In step 1705, the entire control program 190 activates the form process defining and executing program 194 to display the contents of the form format table 199 and the form data table 196 on the display 11 of the form processing apparatus 1 as the electronic form 30.

Paragraph beginning at page 52, line 1, has been amended as follows:

In step 1705, the form process defining and executing program 194 executes the processing defined as the item processing of the process defining file 471, and the worker B visually checks whether or not necessary form data should be inputted.

Paragraph beginning at page 52, line 8, has been amended as follows:

When the worker B instructs the end of the processing, if the encryption is defined as the postprocessing of the processing definition, then in step 1706, form data is encrypted in accordance with the contents of the postprocessing. Here, the encryption is not defined, and

hence form data is not encrypted.

Paragraph beginning at page 52, line 12, has been amended as follows:

In step 1707, the entire control program 190 activates again the data input and output program 191 to send the electronic form 30 including the encrypted form data to the network, from which the electronic form 30 is transferred to the worker C. This is a flow of a form processing executed by the worker B. The details of decrypting form data at the step 1703 will be described next with reference to a flowchart of FIG. 19.

Paragraph beginning at page 52, line 28, has been amended as follows:

FIG. 19 is a flowchart showing the procedure of decrypting form data according to this embodiment. Referring to FIG. 19, and following the start of operation, in the next decision step 1901, it is checked whether or not the private key file 451 is recorded on the floppy disk 45 which is loaded onto the floppy disk drive 14. If the private key file 451 is not recorded on the floppy disk 45 as represented by a NO at the decision step 1901, then control goes to step 1906, then control goes to a step 1906. If the private key file 451 is recorded on the floppy disk 45 as represented by a YES at the decision step 1901, then control goes to step 1902, whereat the private key file 451 is read in the work area 197.

Paragraph beginning at page 54, line 6, has been amended as follows:

FIG. 20 is a flowchart showing the procedure of editing the form format according to this embodiment. Referring to FIG. 20, and following the start of operation, in step 2001, with reference to a value of position information 542-a of the first item of the item list 54 of the form format table 199 expanded on the main memory 19, an abscissa and an ordinate for

displaying the corresponding item are memorized in the display coordinate table 198 on the main memory 19.

Paragraph beginning at page 54, line 19, has been amended as follows:

In the next decision step 2002, the contents of cell information 545 are checked. If the cell information 545 is not at "all displayed" as represented by a NO at the decision step 2002, then control goes to the next decision step 2003. If on the other hand the cell information 545 is at "all displayed" as represented by a YES at the decision step 2002, then control goes to step 2005.

Paragraph beginning at page 54, line 24, has been amended as follows:

In the decision step 2003, it is determined whether or not form data is stored in the form data storage area 546. If form data is not stored in the form data storage area 546. If form data is not stored in the form data storage area 546 as represented by a NO at the decision step 2003, then control goes to step 2004, whereat NULL is written in the position information of the corresponding item. If form data is stored in the form data storage area 546 as represented by a YES at the decision step 2003, then control goes to step 2005.

IN THE CLAIMS:

Please **cancel** claims 1-23, and **add** claims 24-30, as follows:

–24. A storage medium for recording a document circulation program for circulating a document having a plurality of data blocks in such a manner that said document

circulation program can be read by a computer, said storage medium comprising:

a code for receiving said document at a designated worker from a network in which said document contains data blocks relevant to different workers encrypted by using different encrypting keys corresponding to said different workers; and

a code for decrypting an encrypted portion of said document received at said designated worker from said network by using a decrypting key corresponding to said designated worker; and

a code for setting a display condition that said document is displayed after deleting therefrom a data block encrypted by said different workers.

25. A storage medium according to claim 24, further including a code for indicating whether each of data blocks included in said document is a decrypted document, and whether said data block which cannot be decrypted is to be displayed.

26. A storage medium for recording a document circulation program readable by a computer system for circulating a document having a plurality of data blocks over a network, said storage medium comprising:

a code for encrypting a certain data block of a plurality of data blocks of a document relevant to a certain worker by using an encrypting key corresponding to said certain worker and encrypting another data block of said plurality of data blocks of said document relevant to another worker by using an encrypting key corresponding to said another worker;

a code for circulating said document having encrypted certain data block and encrypted another data block over a network; and

a code for setting a display condition that said document is displayed after deleting

therefrom a data block which cannot be decrypted when said document is decrypted by using a decryption key corresponding to said certain worker.

27. A storage medium according to claim 26, further including a code for indicating whether each of data blocks included in said document is a decrypted document, and whether said data block which cannot be decrypted is to be displayed.

28. A document circulation method of circulating a document having a plurality of data blocks, comprising:

encrypting a certain data block of a plurality of data blocks in a document relevant to a certain worker by using an encrypting key corresponding to said certain worker;

encrypting another data block of said plurality of data blocks in said document relevant to another worker by using another encrypting key corresponding to said another worker;

circulating said document having said certain data block encrypted by said encryption key and said another data block encrypted by said another encryption key over a network;

receiving said document having encrypted certain data block and encrypted another data block by said certain worker from said network;

decrypting said document by using a decrypting key corresponding to said certain worker; and

setting a display condition that said document is displayed after deleting a data block which cannot be decrypted.

29. A document circulation method according to claim 28, further displaying a column of a data block which cannot be decrypted in the form of a blank, when the encrypted

portion of said document is decrypted by using said another decrypting key corresponding to said another worker.

30. A document circulation method according to claim 28, further determining not to display data when there is no data to be decrypted.

REMARKS

Claims 24-30 are pending in this continuation application. Previously pending claims 1-23 have been canceled herein without prejudice or disclaimer since these claims have already been allowed in the parent application Serial No. 09/190,005 filed on November 12, 1998. Claims 24-30 have been newly added herein for continued prosecution with broader scope of coverage which Applicants believe to be entitled to under the current patent regime in view of all the prior art references cited in the parent application Serial No. 09/190,005, including Ginter et al., U.S. Patent No. 5,892,900, Kaufman et al., U.S. Patent No. 5,497,421 and Pomerantz et al. U.S Patent No. 6,178,243. Newly added claims 24-25 are verbatim copy of the previously pending claims 17 and 24 in the parent application Serial No. 09/190,005. Newly added claims 26-30 define Applicants' disclosed invention slightly differently from that of allowed claims in the parent application Serial No. 09/190,005. No fee is incurred by the addition of claims 24-30.

In view of the foregoing additions and remarks, all claims are deemed in condition for examination. Should any questions remain unresolved, the Examiner is requested to telephone Applicants' attorney at (703) 312-6600.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (500.36734CX1).

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please amend the specification as follows:

Page 1, following the title, please insert the following paragraph:

-- **Cross-Reference to Related Application**

This application is a continuation of application number 09/190,005, filed November 12, 1998.--;

Paragraph beginning at page 17, line 17, has been amended as follows:

A CPU 46 is a processing apparatus for controlling the whole operation of the form processing and generating apparatus 7. When the form processing and generating apparatus 7 defines a form format and a processing procedure, all of other apparatus and the network need not be connected together. The main memory 49 is a storage device for loading a variety of processing programs and data used to execute a suitable processing such as a key generation processing and a processing definition. The display 41 is a display [~~apparatus~~] device capable of displaying processed contents of the processing programs.

Paragraph beginning at page 17, line 19, has been amended as follows:

The keyboard 42 is an [~~apparatus~~] input device for executing an operation in accordance with the processing program and to enter data. The mouse 43 is a device capable of entering an instruction in accordance with the processing program and to enter data. The floppy disk drive 44 is an apparatus capable of writing the private key generated by a private

key FD (floppy disk) generating program 494 in the floppy disk 45.

Paragraph beginning at page 17, line 27, has been amended as follows:

The floppy disk 45 is a storage medium in which there is stored the private key generated by the private key FD generating program. The hard disk 47 is [~~an apparatus~~] a storage device capable of temporarily storing at least the form format file 470 and the processing definition file 471 as defined results and is able to store the public key file 472 generated by the public key file generating program 495.

Paragraph beginning at page 18, line 16, has been amended as follows:

The form format file 470 is a file capable of storing a form format which is a format representing a layout required when an electronic form is outputted on the screen of the display 41 and a [~~printing apparatus~~] printer or the like. The processing definition file 471 is a file capable of storing the processing definition which defines the contents of the processing effected on the electronic form.

Paragraph beginning at page 19, line 7, has been amended as follows:

The entire control program 490 is a [~~process~~] processing unit capable of controlling the entire operation of the key generating processing and the form defining processing. The key generating processing control program 491 is a process unit capable of controlling the whole of the key generating process for generating the private key and the public key.

Paragraph beginning at page 21, line 13, has been amended as follows:

The CPU 16 is a processing [~~apparatus~~] unit capable of controlling the entire operation

of the form processing apparatus 1. The main memory 19 is a storage device capable of loading a variety of processing programs and data which are used to encrypt and decrypt form data and to execute the contents of process definition.

Paragraph beginning at page 21, line 19, has been amended as follows:

The display 11 is [~~an apparatus~~] a device capable of displaying processed contents of the processing program. The keyboard 12 is an [~~apparatus~~] input device capable of executing an operation in accordance with the processing program entering data. The mouse 13 is a device for inputting an instruction in accordance with the processing program.

Paragraph beginning at page 21, line 25, has been amended as follows:

The floppy disk drive 14 is [~~an apparatus~~] a device capable of reading out a private key from the floppy disk 45. The hard disk 17 is [~~an apparatus~~] a storage device capable of temporarily storing at least the form format file 470, the process defining file 471 and the form data file 172.

Paragraph beginning at page 24, line 21, has been amended as follows:

The floppy disk 45 is a medium storage capable of recording the private key file 451 in which a private key file 451 in which a private key is stored. The private key is read in the work area 197 of the main memory 19 through the floppy disk drive 14.

Paragraph beginning at page 26, line 13, has been amended as follows:

The CPU 136 is a processing unit capable of controlling the whole operation of the form processing apparatus 3. The main memory 139 is a storage device capable of loading a

variety of processing programs and data for encrypting form data and executing the contents of the process defining. The display 131 is [~~an apparatus~~] a device capable of displaying the processed contents of the processing program.

Paragraph beginning at page 26, line 16, has been amended as follows:

The keyboard 132 is [~~an apparatus~~] a device capable of executing an operation and entering data in accordance with the processing program. The mouse 133 is a device capable of inputting an instruction in accordance with the processing program. The hard disk 137 is [~~an apparatus~~] a storage device capable of temporarily storing the form format file 470 and the process defining file 471.

Paragraph beginning at page 29, line 15, has been amended as follows:

Referring to FIG. 6, and following the start of operation, when receiving a key generating instruction from an originator, at [~~a~~] step 501, the entire control program 490 activates the key generating processing control program 491, and the key generating processing control program 491 sets a program counter K provided within the work area 475 to "0".

Paragraph beginning at page 29, line 20, has been amended as follows:

At [~~a~~] step 502, the key generating processing control program 491 adds "1" to K and counts the issue number 63. In the next decision step 503, the value of K and the value of N are compared with each other by the key generating processing control program 491. If $K \leq N$ as represented by a YES at the decision step 503, then control goes to [~~a~~] step 504 and the following steps are executed. If a NO is outputted at the decision step 503, then control is

ended.

Paragraph beginning at page 30, line 1, has been amended as follows:

In [a] step 504, the key generating processing control program 491 generates a pair of the private key 64 and the public key 67 based on the public-key cryptosystem by using the key generating program 492, and stores the pair of the private key 64 and the public key 67 thus generated in the work area 475.

Paragraph beginning at page 30, line 10, has been amended as follows:

In [a] step 505, the key generating processing control program 491 executes the worker ID registration program 493, and stores the ID number 61 and the password 62 of the target worker entered by the originator from the keyboard 42 in the work area 475. ~~[I]~~ In this case, although it is assumed that the originator learns the password 62 from the worker in advance, the worker may enter the password 62 directly.

Paragraph beginning at page 30, line 18, has been amended as follows:

In [a] step 506, the key generating processing control program 491 executes the private key FD generating program 494 to write the ID number 61 representing one worker, the password 62 of that person, the issue number 63 and the private key 64 based on the public-key cryptosystem in the private key file 451 within the private key storing floppy disk 45 newly loaded by the originator by using data stored in the work area 475.

Paragraph beginning at page 30, line 27, has been amended as follows:

In [a] step 507, the key generating processing control program 491 executes the public

key file generating program 495 to write the ID number 65, the issue number 66 and the public key 67 in the public key file 472 within the hard disk 47 by using data stored in the work area 475.

Paragraph beginning at page 31, line 13, has been amended as follows:

The floppy disk 45 which stores the private key 64 for decrypting form data is distributed in advance to the worker in response to the authorized duty before [a] work is started. Here, let it be assumed that different private keys 64 in the form of the private key file 451 are distributed to the worker C and the payment server 6 and that the public keys 67 corresponding to at [~~lease~~] least the two private keys 64 are respectively stored in the public key file 472 of the electronic mall server 4.

Paragraph beginning at page 33, line 8, has been amended as follows:

Referring to FIG. 8 and following the start of operation, i.e. when the originator instructs the activation of the form defining processing control program 496 during the entire control program 490 is activated, in [a] step 701, there is activated the form defining processing control program 496 which defines the form format indicative of the layout on the screen and the processing definition which describes the method of processing form data.

Paragraph beginning at page 33, line 13, has been amended as follows:

In [a] step 702, there is designated a kind of defined processing. In the next decision step 703, if it is determined whether [~~or not~~] the form format definition is designated. If the form format definition is designated, then control goes to [a] step 704, whereat the form defining processing control program 496 activates the form format defining program 497. In

the next step 705, the form format is defined by executing the form format defining program 497.

Paragraph beginning at page 33, line 28, has been amended as follows:

In the decision step 703, if it is determined that the processing definition is selected, control goes to [a] step 706, whereat the form defining processing control program 496 activates the process defining program 498. The process definition defines the contents of the processing executed when the electronic form 30 is received, and is stored in the process defining file 471.

Paragraph beginning at page 34, line 5, has been amended as follows:

In [a] step 707, the kind of the processing definition is inputted, and the item processing indicative of a method of calculating form data of respective items and the postprocessing indicative of a processing method executed after a form a data input end instruction was issued are designated.

Paragraph beginning at page 34, line 12, has been amended as follows:

If the item processing definition is designated at [a] decision step 708, then control goes to [a] step 709, wherein the process defining program 498 activates the item process defining program 499. In the next step 710, the item processing definition is executed by executing the item process defining program 499.

Paragraph beginning at page 34, line 19, has been amended as follows:

If on the other hand the postprocessing definition is designated at the decision step 708,

then control goes to [a] step 711, whereat the process defining program 498 activates the postprocessing defining program 476. In the next step 712, the postprocessing definition is executed by executing the postprocessing defining program 476.

Paragraph beginning at page 34, line 25, has been amended as follows:

If there is an instruction for executing other definition after [~~the~~] step 705, [~~the~~] step 710, or [~~the~~] step 712 was ended, then control goes back from [a] step 713 to [~~the~~] step 702. If all definitions are needed, then control goes to [a] step 714, whereat the previously-defined contents are registered in the form format file 470 or the process defining file 471, and the processing is ended.

Paragraph beginning at page 38, line 26, has been amended as follows:

The dimension number 525 is information indicative [o] <u>of</u> the dimension of the cell within the table. The item list pointer information 526 is information indicative of the pointer to the item list 54. The item style information 527 is information indicating whether the item within the table is the table top item or the table side item.

Paragraph beginning at page 46, line 5, has been amended as follows:

FIG. 14 is a flowchart showing the procedure in which the purchaser A applies for the purchase order. Referring to FIG. 14, and following the start of operation, in [a] step 1401, when the purchaser A instructs the start of the form issue work by the form processing apparatus 3 which may be connected to the internet 22, the entire control program 190 activates the data input and output program 191.

Paragraph beginning at page 46, line 10, has been amended as follows:

In [a] step 1402, when a URL (Uniform Resource Locator) indicative of a home page address of a desired electronic mail is designated in the WWW browser, the data input and output program 191 issues an information transfer request to the electronic mall server 4 having that URL. Then, the data input and output program 191 receives the form format file 470 and the process defining file 471 transferred from the electronic mall server 4 and temporarily writes the same in the hard disk 137. Further, the form format file 470 is written in the form format table 199 on the main memory 139, and the process defining file 471 is written in the work area 197.

Paragraph beginning at page 46, line 23, has been amended as follows:

In [a] step 1403, the entire control program 190 activates the form process defining and executing program 194 to display the contents of the form format table 199 on the display 131 of the form processing apparatus 3 as the electronic form 30.

Paragraph beginning at page 51, line 4, has been amended as follows:

In [a] step 1702, the data input and output program 191 reads form data of the electronic form 30 transmitted through the network from the purchaser A in the form data table 196 on the main memory 19. Further, the data input and output program 191 reads the form format file 470 in the form format table 199, and reads the process defining file 471 in the work area, respectively.

Paragraph beginning at page 51, line 12, has been amended as follows:

In [a] step 1703, the entire control program 190 activates the form data decryption

program 192 to decrypt the form data table 196. In [a] step 1704, the entire control program 190 activates the form format edit program 193 to edit the form format table 199.

Paragraph beginning at page 51, line 17, has been amended as follows:

In [a] step 1705, the entire control program 190 activates the form process defining and executing program 194 to display the contents of the form format table 199 and the form data table 196 on the display 11 of the form processing apparatus 1 as the electronic form 30.

Paragraph beginning at page 52, line 1, has been amended as follows:

In [a] step 1705, the form process defining and executing program 194 executes the processing defined as the item processing of the process defining file 471, and the worker B visually checks whether or not necessary form data should be inputted.

Paragraph beginning at page 52, line 8, has been amended as follows:

When the worker B instructs the end of the processing, if the encryption is defined as the postprocessing of the processing definition, then in [a] step 1706, form data is encrypted in accordance with the contents of the postprocessing. Here, the encryption is not defined, and hence form data is not encrypted.

Paragraph beginning at page 52, line 12, has been amended as follows:

In [a] step 1707, the entire control program 190 activates again the data input and output program 191 to send the electronic form 30 including the encrypted form data to the network, from which the electronic form 30 is transferred to the worker C. This is a flow of a form processing executed by the worker B. The details of decrypting form data at the step

1703 will be described next with reference to a flowchart of FIG. 19.

Paragraph beginning at page 52, line 28, has been amended as follows:

FIG. 19 is a flowchart showing the procedure of decrypting form data according to this embodiment. Referring to FIG. 19, and following the start of operation, in the next decision step 1901, it is checked whether or not the private key file 451 is recorded on the floppy disk 45 which is loaded onto the floppy disk drive 14. If the private key file 451 is not recorded on the floppy disk 45 as represented by a NO at the decision step 1901, then control goes to [a] step 1906, then control goes to a step 1906. If the private key file 451 is recorded on the floppy disk 45 as represented by a YES at the decision step 1901, then control goes [~~ton a~~] to step 1902, whereat the private key file 451 is read in the work area 197.

Paragraph beginning at page 54, line 6, has been amended as follows:

FIG. 20 is a flowchart showing the procedure of editing the form format according to this embodiment. Referring to FIG. 20, and following the start of operation, in [a] step 2001, with reference to a value of position information 542-a of the first item of the item list 54 of the form format table 199 expanded on the main memory 19, an abscissa and an ordinate for displaying the corresponding item are memorized in the display coordinate table 198 on the main memory 19.

Paragraph beginning at page 54, line 19, has been amended as follows:

In the next decision step 2002, the contents of cell information 545 are checked. If the cell information 545 is not at "all displayed" as represented by a NO at the decision step 2002, then control goes to the next decision step 2003. If on the other hand the cell

information 545 is at "all displayed" as represented by a YES at the decision step 2002, then control goes to [a] step 2005.

Paragraph beginning at page 54, line 24, has been amended as follows:

In the decision step 2003, it is determined whether or not form data is stored in the form data storage area 546. If form data is not stored in the form data storage area 546. If form data is not stored in the form data storage area 546 as represented by a NO at the decision step 2003, then control goes to [a] step 2004, whereat NULL is written in the position information of the corresponding item. If form data is stored in the form data storage area 546 as represented by a YES at the decision step 2003, then control goes to [a] step 2005.

IN THE CLAIMS:

Please **cancel** claims 1-23, and **add** claims 24-30, as follows:

–24. A storage medium for recording a document circulation program for circulating a document having a plurality of data blocks in such a manner that said document circulation program can be read by a computer, said storage medium comprising:

a code for receiving said document at a designated worker from a network in which said document contains data blocks relevant to different workers encrypted by using different encrypting keys corresponding to said different workers; and

a code for decrypting an encrypted portion of said document received at said designated worker from said network by using a decrypting key corresponding to said designated worker; and

a code for setting a display condition that said document is displayed after deleting therefrom a data block encrypted by said different workers.

25. A storage medium according to claim 24, further including a code for indicating whether each of data blocks included in said document is a decrypted document, and whether said data block which cannot be decrypted is to be displayed.

26. A storage medium for recording a document circulation program readable by a computer system for circulating a document having a plurality of data blocks over a network, said storage medium comprising:

a code for encrypting a certain data block of a plurality of data blocks of a document relevant to a certain worker by using an encrypting key corresponding to said certain worker and encrypting another data block of said plurality of data blocks of said document relevant to another worker by using an encrypting key corresponding to said another worker;

a code for circulating said document having encrypted certain data block and encrypted another data block over a network; and

a code for setting a display condition that said document is displayed after deleting therefrom a data block which cannot be decrypted when said document is decrypted by using a decryption key corresponding to said certain worker.

27. A storage medium according to claim 26, further including a code for indicating whether each of data blocks included in said document is a decrypted document, and whether said data block which cannot be decrypted is to be displayed.

28. A document circulation method of circulating a document having a plurality of data blocks, comprising:

encrypting a certain data block of a plurality of data blocks in a document relevant to a certain worker by using an encrypting key corresponding to said certain worker;

encrypting another data block of said plurality of data blocks in said document relevant to another worker by using another encrypting key corresponding to said another worker;

circulating said document having said certain data block encrypted by said encryption key and said another data block encrypted by said another encryption key over a network;

receiving said document having encrypted certain data block and encrypted another data block by said certain worker from said network;

decrypting said document by using a decrypting key corresponding to said certain worker; and

setting a display condition that said document is displayed after deleting a data block which cannot be decrypted.

29. A document circulation method according to claim 28, further displaying a column of a data block which cannot be decrypted in the form of a blank, when the encrypted portion of said document is decrypted by using said another decrypting key corresponding to said another worker.

30. A document circulation method according to claim 28, further determining not to display data when there is no data to be decrypted.--